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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/529,533  
Filing Date: March 29, 2005  
Appellant(s): Fayet ET AL.

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James A. Balazs  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 03/05/2009 appealing from the Office action mailed 10/16/2008.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is incorrect.

The amendment after final rejection filed on 12/10/2008 has been entered.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is substantially correct. The changes are as follows:

**WITHDRAWN REJECTIONS**

The following grounds of rejection are not presented for review on appeal because they have been withdrawn by the examiner. Item 1 of the appeal, the 35 USC 112 first paragraph rejection of claim 8, has been withdrawn by the examiner.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

5,879,519	Seeser et al.	03-1999
3,884,787	Kuehnle	05-1975
6,306,265	Fu et al.	10-2001

**(9) Grounds of Rejection**

The 35 USC 112 first paragraph rejection of claim 8 has been withdrawn by the examiner.

The following grounds of rejection are applicable to the appealed claims:

Claims 1 and 7-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Seeser et al. (US 5879519, hereafter '519), further in view of Kuehnle (US 3884787, hereafter '787) and Fu et al. (US 6306265, hereafter '265).

'519 teaches some limitations of claim 1:

A device (Figs. 14-16) for coating a web material (#73A) in a single step PECVD process (magnetron #26-28, same as #30 of Fig. 5, is capable of PECVD by feeding reactive gas; by feeding the same reactive gas to each of #26-28 is a single step PECVD), the device comprising: a vacuum chamber (see Fig. 2, #12, vacuum pump system, col. 6, line 38-39, Fig. 15 is one embodiment of Fig. 2) and a rotating drum (#79, col. 16, line 40) for supporting and continuously (as shown in Figs. 14-16) transporting a web material, more than two independent, substantially identical (each #26-28 are structurally substantially identical to #30 of Figs. 4&5, see Fig. 1), rectangular magnetron electrodes (#26-28, deposition devices include magnetron #30, see Fig. 1), each magnetron electrode (#40A, the altered inverse linear magnetron, Fig. 37A, alternate embodiment of #30, col. 25, line 32-33) being powered with an alternating voltage by its own power supply unit (#242, col. 25, lines 53-55, notice that #242 is available to each magnetron electrode), and a plurality of gas supply lines (#57, Fig. 6, col. 26, lines 1-4; or #37 which more clearly seen in Fig. 4 and 5), the magnetron electrodes are arranged with the magnetron faces facing the circumferential surface of the drum and at a same distance the lengths of the magnetron faces extending parallel to a drum axis and the widths of the magnetron faces extending substantially tangential to the circumferential surface, and the gas supply lines extend between neighboring magnetron electrode (#57, shown in Fig. 7, is outside of magnetron, therefore, between neighboring magnetron) and substantially parallel to the drum axis (all these are shown in Fig. 15) and comprise rows of gas outlets (as shown #57 with rows of gas outlet holes, Fig. 6) arranged for gas injection substantially perpendicular to the circumferential drum surface (the gas injection is substantially toward the coating web for the purpose of coating), wherein the magnetron faces and the gas supply lines are arranged side by side (as shown in Fig. 7, #57 and #46 are side by side) to form, together with a part of the circumferential surface of the rotating drum, one baffle-free combined process space (as shown in Fig. 16, there is a space free of baffle; alternatively, in Fig. 15, one baffle free space is between the baffle #32 and the web) and wherein the gas supply lines are connected to a source of only one process gas

mixture (the apparatus can be connected to the same gas source in Fig. 15; alternatively, Fig. 16 showed any one of the #26-#28 can be used in all stations).

'519 does not teach the other limitations of claim 1:

The drum being one of electrically grounded, electrically floating, and negatively biased; a center pole and a peripheral pole, the two poles having opposite polarities and the peripheral pole extending around the center pole.

'787 is an analogous art in the field of PECVD of flexible film (or web, col. 1, lines 20-24), particularly in providing uniform coating (col. 5, lines 5-6; '519, col. 3, lines 29-35). '787 teaches negatively bias drum (#58, Fig. 2) for the purpose of harder deposit with lower resistivity (col. 9, lines 57-63).

'265 is an analogous art in the field of thin film deposition (title), particular in improving sputtering magnetron design (col. 4, lines 31). '265 provides an unbalanced magnetron design (Fig. 7 and Fig. 17) with inner poles having opposite polarities and peripheral pole extending around the center pole; and the inner poles having magnetic flux less than peripheral poles by a factor of 2 (col. 11, lines 54-58), for the purpose of supporting a higher-density plasma deep into the processing area (col. 11, line 60 to col. 12, line 11).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have applied negative bias, as taught by '787, to the drum (#79) to the apparatus in Fig. 15 of '519 for the purpose of harder deposit with lower resistivity; and to have replaced the magnetron of '519 with the magnetron design from Fig. 7 of '265 for the purpose of supporting a higher-density plasma deep into the processing area, with a reasonable expectation of success.

'519 further teach the limitation of:

Claim 7: The magnetron electrode constitutes a twin magnetron (Fig. 7, two B field are shown).

Claim 8: The device according to claim 1, further comprising means for (#12, pump, Fig. 2; this is treated under 35 USC 112 6th paragraph, see MPEP 2181, as being an exhaust [0018], lines 3-4) removing in an axial direction the gas supplied to the space between magnetron faces and the rotating drum.

Claim 9: The magnetron faces comprise electrode pieces of a non magnetic material (#43, stainless steel, col. 8, lines 52-54).

Claim 10: The electrode pieces (#43) of the magnetron faces comprise channels (#45, col. 8, lines 54-55) for receiving a cooling medium.

Claim 11: The magnetron electrodes constitute magnetrons of an unbalanced type (Fig. 40, alternative magnetron, col. 27, lines 23-37).

'519 further teaches permanent magnets supplying magnetic field of rectangular racetrack configuration, but is silent as to the magnetic strength of the component.

'265 teaches the limitations of claim 12:

The magnetron faces comprise permanent magnetic central and peripheral poles, the central pole having a magnetic strength that is about half of a magnetic strength of the peripheral pole (col. 11, lines 54-58).

#### **(10) Response to Argument VII**

In response to argument 1, the examiner has withdrawn the rejection of Claim 8 under 35 USC 112 first paragraph rejection,.

In regarding to argument 2 of claims 1 and 7-12 under 35 USC 103(a),  
Applicants argue:

1) that Seeser '519 does not teach a single step coating process.

The examiner had indicated that the single step process is an intended use of an apparatus (see bottom two lines of page 2 of the Advisory Action, 12/18/2008).

Applicant has not addressed and argued against the intended use.

In addition, the examiner had also provided citing of Seeser's teaching of single step processing: "This arrangement 70 provides ..., tailored single or multiple layer sputtering deposition", col. 16, lines 33-35 and "one can sputter deposit or oxidize one layer at a time along the entire length of the web 73", col. 16, lines 49-52. (See top five lines of page 3 of the Advisory Action, 12/18/2008)

2) that Seeser '519 does not teach magnetron faces and gas supply lines arranged side by side.

The examiner had indicated that gas supply lines are arranged side by side with a magnetron, (as shown in Fig. 7, gas supply lines #57 and anode #46 of magnetron are side by side). Applicants are arguing that some Figures of '519 showing a distance between magnetrons, including Figs. 8, 9 and 16.

The examiners maintains that the distance between the magnetron in Figs. 8 and 9 are similar to the distance of the magnetron between the magnetrons 6 in Applicants' Figs. 2 and 3. The examiner also considers that the magnetrons in Fig. 16 is side by side in the broadest reasonable interpretation.

3) that Seeser '519 does not teach all gas supply lines are connect to a source of only one process gas.

Applicants' argument is based on the same argument as in 1) and has already been addressed above. The examiner maintains that not only the use of gas is an intended use, also Seeser clearly teaches a single layer deposition or oxidation along the entire length of the web, therefore, would have supplied the same process gas to all gas supply lines.



4) Additionally, Applicants argue that Seeser does not teach that each magnetron has its own power supply unit because Fig. 37A shows power supply of one magnetron unit, and there is no disclosure how the whole system comprising several magnetrons looks like.

This argument is found not persuasive. A person of ordinary skill in the art, without further evidence to the contrary, would have placed the magnetron unit of Fig. 37A at each station in Figs. 15-16. In addition, for the purpose of more economical mass production, easy of maintenance, and/or modular design, it would have been preferable to mass produce unit like Fig. 37A.

#### **(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Keath T Chen/  
Examiner, Art Unit 1792

/Michael Cleveland/  
Supervisory Patent Examiner, Art Unit 1792  
  
/Jennifer Michener/  
QAS, TC1700